World Health Organization

Technical briefing for Appendix 3 of the Global Action Plan for Non-Communicable Diseases

Interventions to reduce the harmful use of alcohol

List of interventions

Number	Interventions
A1	Increase excise taxes on alcoholic beverages
A2	Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising (across multiple types of media)
A3	Enact and enforce restrictions on the physical availability of retailed alcohol (via reduced hours of sale)
A4	Enact and enforce drink-driving laws and blood alcohol concentration limits via sobriety checkpoints
A5	Provide brief psychosocial intervention for persons with hazardous and harmful alcohol use

Identification of interventions

The assessed set of interventions for alcohol control is based on the WHO Global Strategy to reduce the harmful use of alcohol [1], along with available evidence of their effectiveness and accumulated experience with their implementation at country level. Specific intervention strategies falling within the target areas of the Global Strategy that have been subjected to WHO-CHOICE cost-effectiveness analysis are shown in the table above.

Methodological assumptions

- The level of at-risk alcohol consumption considered in this analysis as hazardous and harmful use is defined as more than an average of 40 grams of pure alcohol per day for males, and 20 grams per day for females. Rates of hazardous and harmful alcohol use were generated on the basis of latest estimates from the Global Information System on Alcohol and Health (GISAH) [2].
- Alcohol use is a risk factor for many diseases and injuries. Sex-specific relative risks for each disease and injury category were multiplied by the prevalence of hazardous and harmful alcohol use to form population attributable fractions [2]. The fraction of global deaths and Years Lived with Disabilities (YLDs) attributable to alcohol use is shown below (region-specific values were used in the analysis).
- Further details of the methods developed and used in the analysis are contained in a peer-reviewed journal article that was published in 2018 [3].

- The impact of interventions was estimated with the OneHealth Tool [4]. For disease and injury categories not yet built into OneHealth, health impacts were estimated by reference to alcohol-attributable fractions of deaths and YLDs (data available from the Global Burden of Disease studies).

Table 1: Alcohol-attributable fractions (global summary)

Diseases	Deaths		Years lived with disability (YLDs)	
	Male	Female	Male	Female
Alcohol use disorders	100%	100%	100%	100%
Epilepsy	16%	6%	16%	7%
Tuberculosis	15%	5%	18%	6%
Pancreatitis	32%	12%	34%	15%
Liver cirrhosis	53%	45%	34%	41%
Liver cancer	14%	7%	15%	7%
Breast cancer	0%	8%	0%	9%
Colorectal cancer	13%	7%	13%	7%
Larynx cancer	25%	9%	27%	9%
Oesophagus Cancer	27%	9%	28%	9%
Oral Cavity / Pharynx Cancer	37%	12%	40%	13%
Ischemic Stroke	5%	3%	3%	0%
Hemorrhagic Stroke	14%	7%	16%	-5%
Hypertension	14%	4%	13%	5%
Injuries	**Male**	**Female**	**Male**	**Female**
Road traffic injuries	19%	4%	14%	4%
Poisonings	26%	5%	15%	4%
Falls	27%	3%	14%	4%
Fire	17%	4%	13%	4%
Drowning	18%	3%	14%	4%
Other unintentional	23%	5%	14%	5%
Self-harm	31%	5%	14%	4%
Interpersonal violence	26%	7%	13%	4%

Table 2: Impact sizes used in WHO-CHOICE analysis

	Population (P), effect size of interventions (E) and outcomes (O)	Comments on evidence and main changes to 2017 analysis
A1	P: Policy/legislative intervention covering the entire population E: Impact on prevalence of hazardous and harmful drinking varies according to rates of current tax, (un)recorded use and demand elasticity.	Country-specific rates of excise tax, unrecorded consumption and market distribution for different beverage types extracted from GISAH [2] Beverage-specific demand elasticities for alcohol, by country income level, based on international reviews (range - 0.50 [beer] to -0.79 [wine and spirits) [5,6]. A 50% increase over current tax rates was modelled.

	O: Healthy Life Years (HLYs) gained through the reduction of alcohol drinking	The same assumptions as in the 2017 analysis were used, except for rates of excise tax, for which country data were updated where applicable and available.
A2	P: Policy/legislative intervention covering the entire population E: 1.2% reduction in prevalence. O: Healthy Life Years (HLYs) gained through the reduction of alcohol drinking	Change in prevalence simulated for each world region on the basis of estimated change in total drinking volume, based on cross-sectional analyses of data from 15 LAMICs, which found an inverse association between increased marketing restrictions and total drinking volume (a 3% reduction in drinking volume per additional level of restriction for beer, wine and spirits across 4 types of media respectively, for a total effect size of -0.72 for a 2-point increased restriction level) [7]. The same assumptions as in the 2017 analysis were used.
A3	P: Policy/legislative intervention covering the entire population E: 1.8-2.1% (male), 4% (female) reduction in prevalence. O: Healthy Life Years (HLYs) gained through the reduction of alcohol drinking	Change in prevalence simulated for each world region on basis of estimated change in total drinking volume, based on cross-sectional analyses of data from 15 LAMICs, which found an inverse association between increased restrictions on business hours for off-premises alcohol sales and total drinking volume (-0.88) [7]. The same assumptions as in the 2017 analysis were used.
A4	P: Policy/legislative intervention covering the entire population E: 15% reduction in alcohol-attributable years lived with disability (YLD) and 20% reduction in road traffic deaths [8] O: Healthy Life Years (HLYs) gained through the reduction of alcohol drinking	Effect size applied to estimated deaths and YLD for road traffic injuries due to drink-driving (data for which are available at regional and country level) [2,9]. The same assumptions as in the 2017 analysis were used.
A5	P: hazardous and harmful alcohol users E: Prevalence reduction (at full coverage) varies by age, sex and region (0% [female, 15-59 years], 11-17% [female, 60+ years], 13-21% [male, 15-59 years], 6-11% [males, 60+ years]). O: Healthy Life Years (HLYs) gained through the reduction of alcohol drinking	Intervention coverage modelled at 50%. Change in prevalence simulated for each world region on basis of estimated change in consumption (3.6 drinks per week less) and heavy episodic drinking (12% less) [10]. Reduction in disability weight also estimated as proportion of harmful use decreases (0.8-2.7%). The same assumptions as in the 2017 analysis were used.

Table 2: Costing assumptions used in WHO-CHOICE analysis

	Interventions	Costing assumptions
A1	Increase excise taxes on alcoholic beverages	Key categories of resource include human resources (e.g. administrators, lawyers), training (e.g. enforcement), meetings, mass media.
A2	Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising (across multiple types of media)	Key categories of resource include human resources (e.g. administrators, lawyers), training (e.g. enforcement), meetings, mass media.
A3	Enact and enforce restrictions on the physical availability of retailed alcohol (via reduced hours of sale)	Key categories of resource include human resources (e.g. administrators, lawyers), training (e.g. enforcement), meetings, mass media.
A4	Enact and enforce drink-driving laws and blood alcohol concentration limits via sobriety checkpoints	Key categories of resource include human resources (e.g. legislation, enforcement by police officers at roadside checkpoints), training, mass media, equipment (hand-held speed camera, breathalyser, traffic cones, police vehicle).
A5	Provide brief psychosocial intervention for persons with hazardous and harmful alcohol use	Key categories of resource include contacts with primary health care (for screening, assessment, intervention and follow-up) and follow-up interventions sessions for diagnosed heavy drinkers (outpatient).

References

[1] World Health Organization (2010) Global Strategy for reducing the harmful use of alcohol. Geneva: World Health Organization.

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[3] Chisholm D, Moro D, Bertram M, *et al.* (2018) Are the "Best Buys" for alcohol control still valid? An update on the comparative cost-effectiveness of alcohol control strategies at the global level. *J Stud Alcohol Drugs* **79**(4): 514-522.

[4] One Health Tool. Supporting integrated strategic health planning, costing and health impact analysis. Available: https://www.who.int/tools/onehealth

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[9] World Health Organization. WHO Global health Estimates 2015. Available: https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates

[10] Jonas DE, Garbutt JC, Brown JM, *et al.* (2012) Screening, Behavioral counseling, and referral in primary care to reduce alcohol misuse. Rockville (MD): Agency for Healthcare Research and Quality (US)